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(54) Kettle or like utensil

(57) A kettle or like utensil comprises a body 10, suitable for containing liquid to be boiled, the body having a planar base wall 11, side wall(s) 12 terminating above the base, a transition wall 16 extending inwardly and downwardly from the side wall(s) to the base, the transition wall defining a rebate 17 at the lower corner of the body; a skirt 13 extends downwardly from the side wall(s) and terminates flush with and in spaced surrounding relationship to the base; a heat transfer element 18 is located in the rebate between the transition wall and the skirt. Preferably the skirt is provided with an inwardly directed flange 15 to retain the heat transfer element, and is pierced by a series of apertures 19. Preferably the skirt is spun onto the body at ridge 14. The heat transfer element may be formed from wire wound in the manner of a helical spring and the rebate may be concave.

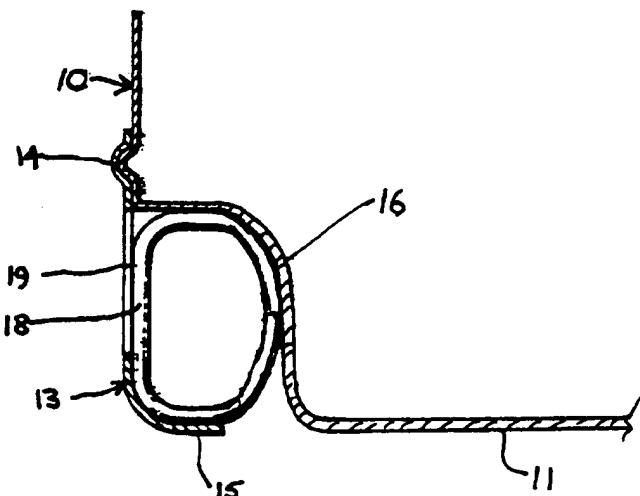


Fig. 2

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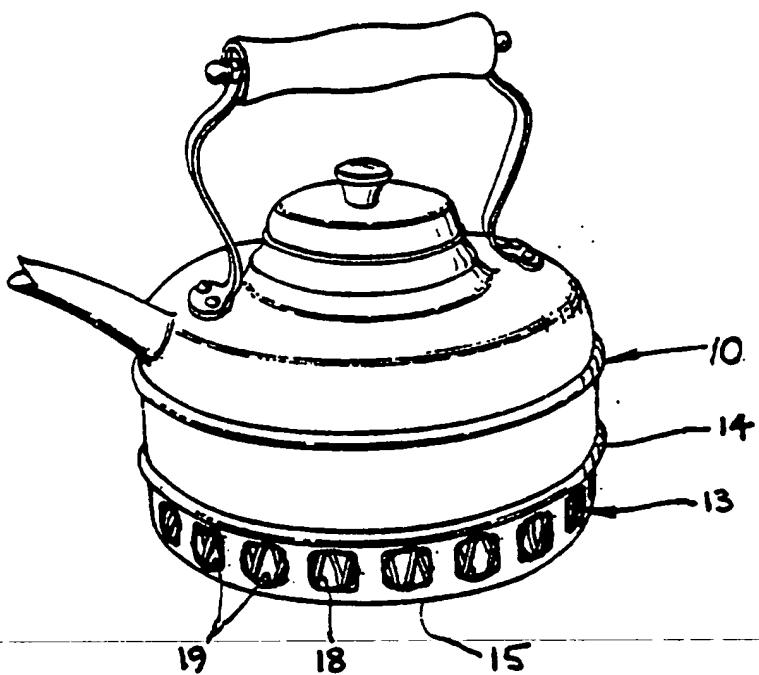


Fig. 1.

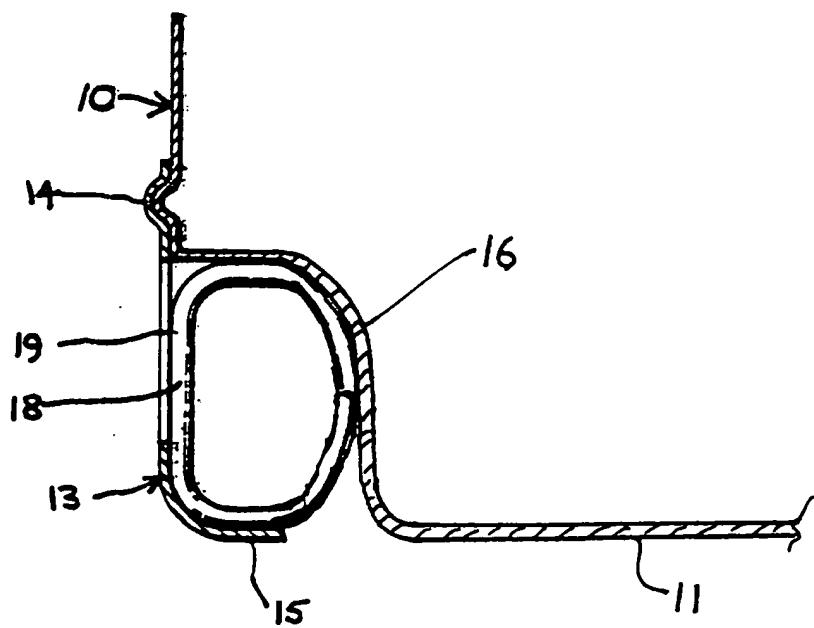


Fig. 2

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KETTLES AND LIKE UTENSILS

This invention relates to kettles and other cooking utensils for boiling water or other liquids on cookers, stove hot plates or burners. The invention may have application to such utensils as steamers or pressure cookers as well as simple saucepans and kettles and the term "kettle or the like" is used hereinafter to include all such utensils where the context so admits.

More specifically the invention relates to bases for kettles or the like of the kind known as quick-boiling bases commonly consisting of a downwardly extending peripheral skirt provided with apertures therearound and a toroidal coiled wire heat transfer element extending around the interior of the skirt in abutment therewith and with a peripheral area of a bottom wall of the kettle or the like, said bases providing improved efficiency by way of heat transfer and freedom of combustion when used in combination with gas or other fluid fuelled naked flame burners.

One form of quick-boiling base is described in our specification GB-A-1 392 848.

The object of the present invention is to provide a kettle or the like having a base structure adapted for efficient operation on cookers and burners of all types including electrically heated or solid fuel heated hot plates, hobs and the like as well as naked flame burners; and to provide a kettle or the like which is economical to produce, durable, and reliable and efficient in operation.

According to the invention there is provided a kettle or the like (as hereinbefore defined) including a body for containing water or other liquid to be heated having a generally planar bottom wall, a side wall or walls which terminate downwardly above the level of the bottom wall, and a transition wall section extending inwardly and downwardly from the side wall or walls to

join the bottom wall so that the lowermost corner or corners of the body are rebated; a peripheral skirt extending downwardly from the lower edge of the side wall or side walls in spaced surrounding relationship to said bottom wall and terminating in the downward direction flush with the bottom face of that wall; and a heat transfer element located within the groove or recess defined between the skirt and the transition section.

Typically the kettle or the like will be circular in plan so that said recess and the heat transfer element are toroidal in form, but it is contemplated that square or other shapes of utensil might incorporate the invention.

Preferably the skirt is pierced by a series of circular or other apertures; and/or it is preferred that the skirt is provided with an inwardly directed flanged lower edge to retain and improve contact with the heat transfer element for maximum thermal efficiency.

An example of the invention is now more particularly described with reference to the accompanying drawings, wherein:

Figure 1 is a perspective view of a kettle, and

Figure 2 is a section on a radial plane of a quick boiling base of the kettle.

The kettle has a sheet-metal body 10, e.g. of plated copper or possibly aluminium, circular in plan, and the upper part of which is of conventional construction and shape.

The base portion of body 10 is shaped to provide a lowermost generally planar bottom wall 11 but the cylindrical side wall 12 of the body terminates downwardly above the level of the bottom wall. A metal skirt 13 is spun onto the body by engagement with a radially protruding ridge 14 on a lower part of side wall 12 so that the skirt 13 extends downwardly from the periphery of side wall 12 to a total vertical depth flush

with the underface of bottom wall 11, the lower edge part of skirt 13 being curved inwardly to form a horizontal flange 15 co-planar with but radially spaced from bottom wall 11 in surrounding relationship thereto.

A transition section 16 (Figure 2) of the body wall extends radially inwardly from the bottom edge of side wall 12, curving downwardly to a vertical reduced diameter portion merging at its bottom edge with the outer edge of bottom wall 11.

Thus the lower corner of body 10 has a toroidal concave recess or rebate 17 partly enclosed by skirt 13.

Nested within rebate 17 is a heat transfer element 18 formed from wire wound in the manner of a helical spring of general toroidal shape, and sized to closely abut transition section 16 and skirt 13, the element being held tightly in place by flange 15.

Skirt 13 is pierced by a series of apertures 19 in conventional manner, in this example the apertures are circular but for some applications square or oblong apertures or angled slots might be provided.

The dimensions and proportions of the kettle body and base may vary according to its liquid capacity and other factors. A typical 1.5 litre capacity kettle may have an overall body diameter of around 190 mm, i.e. that will be the diameter of its side walls 12, and with a bottom wall diameter of around 145 mm, thus the radial width of the recess or rebate 17 defined by skirt 13 in a horizontal plane will be around 22 mm and the height of said rebate, i.e. the distance between the lower edge of side wall 12 and the bottom of skirt 13 defined by flange 15 will also be around 22 mm. With these dimensions an annular gap of around 8 mm is left between the radially inner edge of flange 15 and the radially outer edge of bottom wall 11.

The use of the invention enables a common form of kettle or other utensil to be provided which will

operated efficiently on most if not all types of cooker, stove or hot plate whether using gas or other fluid fuelled naked flame burners; electrically heated plates, hobs or elements; or solid fuel hot plates or hobs. The generally planar lowermost bottom wall 11 provides maximum area contact with hot plates and hobs while the skirt and heat transfer element largely maintains the well known advantages of the quick-boiling base used on gas burners and the like. Hitherto it has been necessary to provide two types of kettle as the known form of quick-boiling base was suitable only for gas or other stoves or cookers having naked flame burners.

CLAIMS:-

1. A kettle or the like including a body for containing water or other liquid to be heated having a generally planar bottom wall, a side wall or walls which terminate downwardly above the level of the bottom wall, and a transition wall section extending inwardly and downwardly from the side wall or walls to join the bottom wall so that the lowermost corner or corners of the body are rebated; a peripheral skirt extending downwardly from the lower edge of the side wall or side walls in spaced surrounding relationship to said bottom wall and terminating in the downward direction flush with the bottom face of that wall; and a heat transfer element located within the groove or recess defined between the skirt and the transition section.
2. A kettle or the like as in Claim 1 of circular plan, said recess and the heat transfer element being toroidal in form.
3. A kettle or the like as in Claim 2 having a sheet metal body and a metal skirt spun onto the body.
4. A kettle or the like as in Claim 1, 2 or 3 wherein the skirt is pierced by a series of apertures.
5. A kettle or the like as in any preceding Claim wherein the skirt is provided with an inwardly directed flange to retain and improve contact with the heat transfer element.
6. A kettle or the like as in any preceding Claim wherein the heat transfer element is formed from wire wound in the manner of a helical spring.
7. A kettle or the like substantially as hereinbefore described with reference to and as shown in the accompanying drawing.



The
Patent
Office

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Application No: GB 9507734.3
Claims searched: 1-7

Examiner: Gavin Dale
Date of search: 16 April 1996

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): A4A (ACA, AN, AWA, AWC)

Int Cl (Ed.6): A47J 27/21

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 2118024A	(SHIN-I CHEN) See figures 1 and 4	1,2
A	GB 1392848	(LEE & WILKES LIMITED) See figure 1	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

DERWENT-ACC- 1996-445425

NO:

DERWENT- 199645

WEEK:

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TITLE: Kettle for boiling liquid - has body with planar base wall side walls and transition wall extending down from side walls

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PATENT-ASSIGNEE: LEE & WILKES LTD[LEEWN]

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PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
GB 2299745 A	October 16, 1996	N/A	008	<u>A47J 027/21</u>

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
GB 2299745A	N/A	1995GB-0007734	April 13, 1995

INT-CL (IPC): A47J027/21

ABSTRACTED-PUB-NO: GB 2299745A

BASIC-ABSTRACT:

The kettle has a body (10) for containing fluid and having a planar base wall (11) side walls (12) terminating above the base and a transition wall (156) extending inwardly and downwardly from the side walls to the base. The transition wall defines a rebate (17) at the lower corner of the body. A skirt (13) extends downwardly from the side walls and terminates flush with and in spaced surrounding relationship with the base.

The skirt has an inwardly directed flange (15) to retain the heat transfer element and has apertures (19).

ADVANTAGE - Can be used on all types of cookers and burners.

CHOSEN-DRAWING: Dwg.2/2

TITLE-TERMS: KETTLE BOILING LIQUID BODY PLANE BASE WALL SIDE WALL
TRANSITION WALL EXTEND DOWN SIDE WALL

DERWENT-CLASS: P28

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N1996-375084